

In the sloughs themselves, *Scirpus olneyi* A. Gray (fourteen to eighteen atmospheres), *Juncus ballicus* Willd., *Eleocharis palustris* (L.) Roem. and Schultz, and *Scirpus paludosa* A. Nels., are conspicuous. Small areas of the grass *Phragmites communis* Trin. (about eighteen atmospheres) are found near the margin of the densely vegetated areas, and extend as very dwarfed individuals into the moister saline and largely sterile surrounding areas. Where the salinity of the soil has been much increased by evaporation, the salt-grass *Distichlis spicata* (L.) Greene and some other grasses occur.

The extremely limited area occupied by *T. angustifolia* in this locality may be due to its inability to compete under the conditions of this habitat with *Scirpus*, *Juncus* and *Eleocharis* or it may indicate a recent and successful introduction in regions in which conditions are not generally suitable for its growth. *T. angustifolia* is typically a brackish water form often found in maritime marshes. It is interesting to note that the very dwarfed plants of this colony had an osmotic concentration of their tissue fluids of about fifteen atmospheres, whereas collections of *T. latifolia* taken in water of lower osmotic concentration (about 1.2 atmospheres) in high valley marshes near Moroni, Utah, had an osmotic concentration of their leaf tissue fluids of about ten atmospheres.

UNIVERSITY OF MINNESOTA,
MINNEAPOLIS, MINN.

PROCEEDINGS OF THE CLUB

MEETING OF OCTOBER 27, 1926

The meeting was held at the Museum Building of the New York Botanical Garden. The minutes of the meeting of October 12 were read and approved. The following were elected to membership in the Club:

Mrs. Inez M. Haring, Woodland, Ulster Co., New York.

Mr. Samuel Hirschberg, 1215 42 St., Brooklyn, New York.

Mr. Edward D. Lehrer, 1519 55 St., Brooklyn, New York.

After some discussion it was unanimously voted that the last monthly meeting in November, on the Wednesday before Thanksgiving Day, be omitted, and a committee on the time and

place of meetings, to be appointed by the Chair, wait over for future report.

In the discussion on the time of meeting as authorized by the Constitution, Drs. Britton and Barnhart referred to the present condition of the Constitution, which consists of an original document plus all amendments and by-laws passed during the last 37 years, and existent only in the minutes of the Club. It will be necessary either to go through all these minutes for all these years, find the new legislation and incorporate it all in one body with the original Constitution, or else to draft an entirely new Constitution.

As a result of this discussion the Secretary was authorized to ascertain whether the minutes for the period stated are complete so that the necessary data for revising the Constitution may be obtained from them. If they should be found complete, the sum of \$50 was voted by the Club as a remuneration for the work of revising the Constitution in accordance with them.

For the scientific part of the program, Dr. J. S. Karling of Columbia University, addressed the Club on "Variations in the Antheridium of the Characeae."

In method of development and growth the Characeae are perhaps the most diagrammatic of any organism, plant or animal. It is not merely that their diagrammatic and metameric organization leads to the development of the beautiful chandelier-like habit of growth, but their cellular make-up is so simple as to at once suggest the possibility of mathematical analysis. This regularity of growth, according to Braun and Sachs, extends to the antheridia and oogonia as well. In the development of the antheridium, the globular antheridium mother-cell divides until 24 cells are formed. The eight outer cells become the shield cells, the eight middle cells the manubria, and the eight inner cells the primary capitula. Each primary capitulum bears four secondary capitula, which in turn bear four antheridial filaments. This method of development as described by Braun and Sachs has been regarded as the type development. However, a considerable number of variations from this type have been observed, which may be classified into eight groups:

1. In addition to primary and secondary capitula, tertiary and quaternary capitula are frequently formed which bear antheridial filaments.

2. The number of manubria and primary capitula often varies. As many as 12 manubria and 16 primary capitula have been found in a single antheridium.

3. The antheridial filaments may often branch, sometimes as many as five times.

4. Irregular partitioning of the antheridial filaments is not uncommon. Septa may be formed parallel, diagonal and at right angles to the long axis of the filament.

5. Variations in the number of antheridial filaments borne on each secondary capitulum occur. In *Chara fragilis* the number may vary from one to nine.

6. The tertiary, secondary and primary capitula, and the manubria may often produce bud-like outgrowths which sometimes are cut off by transverse septa.

7. The number of cells in the antheridial filament varies to a considerable degree. In a single species the variation may range from 5 to 150 cells.

8. Inequalities in the size of cells and nuclei occur in the antheridial filaments as a result of irregularities in the distribution of the chromosomes during mitosis. The large and small cells, nevertheless, develop into germ cells, thus forming large and small antherozoids.

ARTHUR H. GRAVES

Secretary.

MEETING OF NOVEMBER 9, 1926

This meeting was held at the American Museum of Natural History. Miss Mary E. Hopper, Barnard College, New York City, was unanimously elected to membership in the Club. Professor Oliver P. Medsger, Head of the Science Department of the Jersey City Schools, gave an illustrated lecture entitled "Flora of the Catskills." The lecturer said in part:

"The tops of many of the Catskills are covered with red spruce and balsam fir. Years ago the hemlock and white pine were probably the most abundant species of trees in the Catskills, but the pines were cut for lumber and the hemlocks for tan bark. The logs of the latter were left to decay on the ground. Hard woods, especially the yellow birch, have taken the place of these

conifers. But on a plateau bounded by Wittenberg, Cornell Slide (the highest peak of the Catskills) and extending south toward Peekamoose, a virgin forest of almost pure red spruce covers several square miles.

The southern Catskills are one of the best regions in the east for the study of ferns. Forty species have been found in Woodland Valley, near Slide Mountain, within a radius of three miles. Among the rare species found here may be mentioned *Ophioglossum vulgatum*, the Adder's Tongue; *Botrychium simplex* and *B. neglectum*; *Matteuccia Struthiopteris*, or Ostrich Fern; *Filix bulbifera*, the Bulblet Bladder Fern; *Polystichum Braunii*, Braun's Holly Fern; *Camptosorus rhizophyllus*, Walking Fern, growing on sandstone rocks, and Boott's Shield Fern, *Dryopteris Boottii*. The last named species Mr. Medsger has cultivated for a number of years and is convinced that it is a natural hybrid between *D. cristata* and *D. intermedia*.

Since the southern Catskills are chiefly covered by forests, the grass and sedge flora is not large but interesting. Peck's Bulrush, *Scirpus Peckii*, apparently new to the area, is found in Woodland Valley. The Catskills are not especially rich in species of orchids. Among the sixteen species that the speaker has collected in the southern Catskills are *Coeloglossum bracteatum*, *Limnorchis hyperborea*, *Lysias orbiculata*, *Blephariglottis lacera*, *Blephariglottis grandiflora*, *Peramium ophioides* and *Malaxis unifolia*.

The most abundant weed of the southern Catskills is Wild or Sweet Marjoram, *Origanum vulgare*. The greatest pest of the northern Catskills is also a labiate, a closely related species, Wild or Creeping Thyme, *Thymus Serpyllum*. A dozen years ago, the thyme was so abundant on the dairy farms of the northern Catskills that some of the farmers gave up in despair. On one large farm dairying was dropped and bee-keeping substituted with excellent success. The thyme is now far less abundant than formerly, and the Marjoram does not seem so plentiful as it was a few years ago."

The lecture was illustrated by a large number of lantern slides, among them photographs of typical woodland plants from the lowlands to the summits of the highest peaks.

ARTHUR H. GRAVES
Secretary.

MEETING OF DECEMBER 14, 1926

This meeting was called to order at the American Museum of Natural History. The following candidates were elected to membership by unanimous vote of the Club:

Miss Grace Griffin, Johnson Hall, 411 W. 116th St., N. Y. C.

Miss Ruth Turner, Johnson Hall, 411 W. 116th St., N. Y. C.

Miss Olga Hingsberg, 1285 Hoe Avenue, New York City.

Mr. William P. Jenks, Morristown, N. J.

Mrs. William P. Jenks, Morristown, N. J.

Mr. Randolph Jenks, Morristown, N. J.

The program for the evening consisted of an illustrated lecture by Dr. Fred J. Seaver entitled "Views of the Bermudas, with notes on some botanical features." Dr. Seaver said in part: The Bermuda Islands are located about 700 miles from New York City and nearly 600 miles from the nearest land, few islands in the world being more remote from large bodies of land. The islands are said to be 365 in number, one for each day in the year. They are so arranged as to form a long irregular hook of land about 20 miles long and never more than 3 miles in width; the total area being about $19\frac{1}{2}$ square miles.

The islands, built up through the agency of coral organisms on a volcanic base, are composed of white limestone, made up of broken shells, corals, and calcareous algae, which have been ground into sand and fused together. The soil is of a reddish color and not of any great depth. The predominating type of vegetation is the Bermuda cedar, similar to our red cedar, but more spreading and of larger growth.

One species of palm, *Sabal blackburniana*, endemic on the Islands, has been threatened with extinction, since it has been in great demand for several purposes. The leaves were used by the first settlers for thatching the roofs of their houses, the buds were found to be edible, and large numbers of trees were thus destroyed. Also, it was found that a good rum could be manufactured from the pith. Finally, however, the government interfered. Nowadays the houses are built of the soft, white limestone which is easily quarried and can be cut with a saw. Even the roofs are made of thin overlapping slabs of this, which becomes harder on exposure to the air. The red cedar, *Juniperus bermudiana*, is much used now in the building of houses.

There are no wells on the islands, and so all water must be caught from the skies. Large stone catch basins are constructed, the run off from which is collected in cisterns. The only methods of travel on the Islands are by donkey or horse and carriage, and by bicycle. There is very little sickness, and the longevity is noteworthy, perhaps due to the easy-going ways of living and the healthful climate.

The Bermudians appear to be especially fond of ornamental gardening, the entire section being almost one continuous park. This tendency is accentuated through the activities of several local garden clubs. Abandoned quarries, which are common in the Islands and had formerly been used as dumping places, have been cleared out and are being used as quarry gardens. "Quarry gardening," has become quite a fad and the results are very interesting. Because of the prevailing winds the gardens are often enclosed by limestone fences or oleander hedges. No place visited by the lecturer has such a display of beautiful gardens, whether they be associated with the wealthiest mansion or the humblest cottage.

ARTHUR H. GRAVES,
Secretary.

MEETING OF JANUARY 11, 1927

This meeting was held at the American Museum of Natural History. The minutes of the meetings of October 27, November 9, and December 14 were read and approved. The following new members were unanimously elected to the Club:

Mr. James B. McFarlin, Winter Haven, Florida.

Dr. Ernest A. Petzke, Hixton, Wisconsin.

Miss Aravilla M. Taylor, Lake Erie College, Painesville, O.

Mrs. Helen M. Trelease, New York City.

According to the usual program of the annual business meeting the reports of the various officers for the year were next received.

The Secretary reported that 14 regular meetings of the Club had been held during the year, with a total attendance of 395, an average of 28 persons per meeting. Twenty-seven new members were elected during 1926; eight were lost through resignation, and 3 by death. The present membership is 305.